Executive Summary

The South Florida Water Management District's (SFWMD or District) strategic goal for all of its water supply planning efforts is to ensure an adequate supply of water to protect natural systems and to meet all existing and projected reasonable-beneficial uses, while sustaining water resources for future generations.

This *2005–2006 Lower West Coast Water Supply Plan Update* (2005–2006 LWC Plan Update) supports the District's findings and recommendations in its *2000 Lower West Coast Water Supply Plan* (2000 LWC Plan), which suggest that most future water needs must be met through development of alternative water sources. Development of new traditional freshwater sources will limited by environmental protections, but some new freshwater development may still be practicable depending on local conditions and quantities needed. Considering the viability and availability of alternative supplies, and the constraints on development of traditional freshwater supplies, the focus of the 2005–2006 LWC Plan Update is on alternative water sources and projects.

The Lower West Coast (LWC) Planning Area has long been a leader in alternative water supply development. Alternative water sources include reclaimed water, surface water captured during wet-weather flows, aquifer storage and recovery, surface reservoirs, and brackish surface water and groundwater. Currently, brackish water sources provide about 40 percent of the area's public potable water supply, and reclaimed water use stands at over 90 percent of the wastewater flow for the area.

As part of the 2005–2006 LWC Plan Update development, the District solicited projects from local suppliers and a total of 153 water supply projects were evaluated. Fourteen traditional supply projects were evaluated, including 11 submitted by local utilities and three projects developed by the District to support an unmet future need by small local utilities. In total, if all of these traditional supply projects were permittable and developed as proposed, they represent about 25 millon gallons per day (MGD) in new supply capacity.

During this process, 117 alternative water supply projects were also evaluated. The alternative sources these projects propose to use include the following:

Brackish Water: 41 projects yielding a potential 231 MGD (finished water).

Reclaimed Water: 55 projects with a total constructed capacity of 307 MGD.

Aquifer Storage and Recovery (ASR): 13 projects with a total dry-season capacity of 32 MGD.

Surface Water: 8 projects with a total design capacity of 42 MGD.

In addition to listing proposed alternative water supply projects, this plan update provides regional project implementation strategies to planners, policy makers and utility directors. All local governments within the LWC Planning Area are required to prepare 10-Year Water Supply Facilities Work Plans that identify water supply projects, and adopt revisions to their comprehensive plans within 18 months following the approval of this water supply plan update.

The Water Protection and Sustainability Program provides annual state revenues matched with District funds to support alternative water supply development. This combination of state and District funds is available each year through the District's Alternative Water Supply Funding Program for projects that are ready to be constructed. Eligible projects can receive up to 40 percent of the construction costs for work that can be completed within the funding period (October 1 through August 1). Funding proposals are solicited in the spring of each year.

To be eligible for cost-share funding, the specific alternative water supply projects must be identified in the appropriate water supply plan. While inclusion in this 2005–2006 LWC Plan Update enables projects planned for the Lower West Coast Region to be eligible to apply for funding assistance from the District's Alternative Water Supply Funding Program, a project's inclusion in this plan does not serve as an application for funding, nor does it guarantee funding. To apply for alternative water supply funding or for more information, see the SFWMD's Web site at: http://www.sfwmd.gov/org/wsd/aws.

Encompassing more than 5,100 square miles, the LWC Planning Area generally reflects the drainage patterns of the Caloosahatchee River Basin and the Big Cypress Swamp. The LWC Planning Area includes all of Lee County, most of Collier and Hendry counties, and portions of Glades, Charlotte and mainland Monroe counties. The Big Cypress Basin, which comprises all of Collier County and part of Monroe County, is also located within the planning area.

The LWC Planning Area's population is expected to increase from 908,500 in 2005 to about 1.6 million by 2025 (U.S. Bureau of the Census 2001). Most of the growth is projected to occur in Collier and Lee counties where population increases of 67 percent and 91 percent, respectively, are projected. Urban water demand (municipal, domestic self-supply, recreational and commercial) in the planning area will increase by 113 MGD in association with the population increase. Water demand associated with new power generation facilities proposed for the planning area will increase by 67 MGD in the next 20 years. By 2025, agricultural acreage under cultivation in the LWC Planning Area is projected to increase by 13,400 acres, in part reflecting a shift in agricultural operations from Lee and Collier counties to Glades and Hendry counties, and requiring an additional 17 MGD in supply.

Traditional water sources for urban and agricultural use in the LWC Planning Area have included supplies from surface water, primarily the Caloosahatchee River (C-43 Canal), and three major aquifer systems: the Surficial Aquifer System, the Intermediate Aquifer System and the Floridan Aquifer System. The Surficial and Intermediate aquifer systems typically contain fresh water, while the Floridan Aquifer in the planning area contains brackish water.

Multiple factors, including water quality deterioration, interference with other existing users and protection of wetlands, continue to limit development of additional fresh groundwater supplies. New supplies from the Caloosahatchee River may be limited by efforts to protect Lake Okeechobee from high water levels and concerns for the integrity of the Herbert Hoover Dike. Alternatives to development of additional traditional freshwater sources to meet increased water needs include development of brackish groundwater in the Lower Hawthorn Aquifer; expansion of the reclaimed distribution and supply system; the capture of seasonally available surface water; and, improved storage opportunities for surface and reclaimed water.

The 2005–2006 LWC Plan Update is organized into seven chapters and nine appendices. The following briefly summarizes the focus of each chapter:

Chapter 1 – Introduction explains the purpose of the water supply plan document, provides an overview of the planning process, and summarizes the SFWMD's accomplishments since publication of the 2000 LWC Plan. New legislation as it relates to the responsibility of each of Florida's five water management districts, as well as the statutory requirements of local governments and water users, are also briefly reviewed.

Chapter 2 – Demand Estimates and Projections provides an updated overview of population and water use trends, by use category, for the LWC Planning Area through the Year 2025. Water use definitions, new calculation methods and estimation models are also discussed.

Chapter 3 – Resource Analysis identifies the region's water sources, summarizes the studies and analyses supporting this 2005–2006 LWC Plan Update, and discusses the tools in place that are used to protect water resources under state law.

Chapter 4 – Issues identifies resource issues in the LWC Planning Area, including limitations on development of new traditional freshwater supplies, coastal water quality issues associated with urbanization and storm water, and the need to develop additional storage opportunities to enable the capture and beneficial use of seasonally available water resources.

Chapter 5 – Evaluation of Water Source Options reviews traditional sources, alternative water sources and storage options suitable for future use and further supply development. Comparative costs for supply development are provided.

Chapter 6 – Water Resource Development Projects discusses the SFWMD's projects that support the Water Supply Development projects (in Chapter 7) for the LWC Planning Area and the District's other planning areas. Water Resource Development projects are generally the responsibility of a water management district, and are intended to assure the availability of an adequate supply of water.

Chapter 7 – Water Supply Development Projects summarizes the projects anticipated to meet the LWC Planning Area's water supply needs for the next 20 years. Local governments, government-owned and privately owned utilities, regional water supply authorities, multijurisdictional water supply entities, self-suppliers, and other water users are primarily responsible for Water Supply Development projects. The primary focus is on alternative water supply projects, which become eligible for state and District funding as a result of inclusion in this water supply plan.

The continued high rate of population growth in the LWC Planning Area, through the Year 2025, will require the region's increased commitment to water conservation and alternative water supply development. Comparison of population projections with the projects listed in this plan update indicates that existing and proposed new supplies are adequate to meet the projected future needs. The SFWMD will maintain efforts to assess water resources, coordinate critical resource protection strategies and projects, and restore vital environmental systems throughout the LWC Planning Area and south Florida.